

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P105085PCT/JPD	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/GB2005/000857	International filing date (day/month/year) 07/03/2005	(Earliest) Priority Date (day/month/year) 05/03/2004
Applicant THE UNIVERSITY OF BATH		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 8 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☒ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☒ Certain claims were found unsearchable (See Box II).

3. ☒ Unity of invention is lacking (see Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☒ none of the figures is to be published with the abstract.

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material



a sequence listing



table(s) related to the sequence listing

b. format of material



in written format



in computer readable form

c. time of filing/furnishing



contained in the international application as filed



filed together with the international application in computer readable form



furnished subsequently to this Authority for the purpose of search

2. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

A. CLASSIFICATION OF SUBJECT MATTER

C12N15/82 A01H5/00 A01H5/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C12N A01H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, Sequence Search, WPI Data, PAJ, EMBASE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE EMBL 'Online! 24 October 2002 (2002-10-24), "Arabidopsis thaliana clone RAFL07-10-G12 (R10939) auxin response factor (At5g62000) mRNA, complete cds." XP002346124 retrieved from EBI accession no. EM_PRO:BT000784 Database accession no. BT000784 SEQ ID No. 1 has 99.8% identity in 3133nt overlap</p> <p style="text-align: center;">----- -/--</p>	<p>46,63, 66-73, 127, 147-156, 165</p>



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

22 September 2005

Date of mailing of the international search report

21.02.2006

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 01/35725 A (MENDEL BIOTECHNOLOGY, INC; JIANG, CAI-ZHONG; HEARD, JACQUELINE; PINEDA) 25 May 2001 (2001-05-25)</p> <p>SEQ ID No. 3 has 100% sequence identity with database emb1 AC: AAE01959 page 4 - page 8</p>	<p>46,63, 66-73, 127, 147-156, 165</p>
X	<p>WO 03/013227 A (MENDEL BIOTECHNOLOGY, INC; RATCLIFFE, OLIVER; RIECHMANN, JOSE, LUIS; A) 20 February 2003 (2003-02-20)</p> <p>claims 1-69 & DATABASE Geneseq 'Online! 15 January 2004 (2004-01-15), "Plant yield-related protein from clone G470." retrieved from EBI accession no. GSP:ADD30076 Database accession no. ADD30076 SEQ ID NO. 6 has 100% identity in 122 nt overlap</p>	<p>46,63, 66-73, 127, 147-156, 165</p>
X	<p>WO 02/15675 A (MENDEL BIOTECHNOLOGY, INC; PILGRIM, MARSHA; CREELMAN, ROBERT; DUBELL,) 28 February 2002 (2002-02-28)</p> <p>SEQ ID No. 5 has 99,845% identity in 2580nt overlapclaims 1-70 & DATABASE Geneseq 'Online! 2 July 2002 (2002-07-02), "Arabidopsis cDNA encoding a transcription factor #163." retrieved from EBI accession no. GSN:ABK65311 Database accession no. ABK65311</p>	<p>46,63, 66-73, 127, 147-156, 165</p>
X	<p>GUILFOYLE TOM J ET AL: "Auxin response factors" JOURNAL OF PLANT GROWTH REGULATION, vol. 20, no. 3, September 2001 (2001-09), pages 281-291, XP002346079 ISSN: 0721-7595 the whole document</p>	<p>46,63, 66-73, 127, 147-156, 165</p>

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB2005/000857

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0135725	A	25-05-2001	AU 1610101 A	30-05-2001
			AU 1765601 A	30-05-2001
			AU 1767101 A	30-05-2001
			AU 1768201 A	30-05-2001
			AU 780463 B2	24-03-2005
			AU 1768301 A	30-05-2001
			AU 1919901 A	30-05-2001
			BR 0015628 A	24-12-2002
			BR 0015631 A	09-07-2002
			BR 0015632 A	24-06-2003
			BR 0015633 A	09-07-2002
			BR 0015634 A	31-12-2002
			BR 0015635 A	31-12-2002
			CA 2390594 A1	25-05-2001
			CA 2390597 A1	25-05-2001
			CA 2390600 A1	25-05-2001
			CA 2391443 A1	25-05-2001
			CA 2391446 A1	25-05-2001
			CA 2391569 A1	25-05-2001
			EP 1230256 A1	14-08-2002
			EP 1230344 A1	14-08-2002
			EP 1229780 A1	14-08-2002
			EP 1229781 A1	14-08-2002
			EP 1230345 A1	14-08-2002
			EP 1229782 A1	14-08-2002
			MX PA02004870 A	10-09-2004
			MX PA02004878 A	05-04-2004
			MX PA02004880 A	05-04-2004
			MX PA02004881 A	05-04-2004
			MX PA02004882 A	05-04-2004
			MX PA02004884 A	05-04-2004
			WO 0136444 A1	25-05-2001
			WO 0136597 A1	25-05-2001
			WO 0135726 A1	25-05-2001
			WO 0135727 A1	25-05-2001
			WO 0136598 A1	25-05-2001
WO 03013227	A	20-02-2003	CA 2456972 A1	20-02-2003
			CA 2456979 A1	20-02-2003
			EP 1485490 A2	15-12-2004
			EP 1420630 A2	26-05-2004
			WO 03013228 A2	20-02-2003
			WO 03014327 A2	20-02-2003
WO 0215675	A	28-02-2002	AU 8661701 A	04-03-2002
			EP 1406483 A1	14-04-2004

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International application No.
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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 1-45, 47-62, 64, 65, 69-126, 128-146, 150-164
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 5.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
46, 63, 66-73, 127, 147-156, 165

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 1-45,47-62,64,65,69-126,128-146,150-164

Present claims 1-45, 47-62,63-65,74-126,128-146,157-164 relate to a method and plants which have been defined merely by a desired effect without any further characterizing feature. A meaningful search on the basis of the "result to be achieved" definition cannot be carried out. In addition, the description does not provide support and disclosure in the sense of Article 6 and 5 PCT for the multitude of compounds and use of said compounds in methods having the said desired property or effect and there is no common general knowledge of this kind available to the person skilled in the art. This non-compliance with the substantive provisions is to such an extent, that the search was performed taking into consideration the non-compliance in determining the extent of the search of the claim (PCT Guidelines 9.19 and 9.20).

The search was consequently restricted to the specifically disclosed compound i.e. the mnt gene and methods using the mnt gene.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 46,63,66-73,127,147-156,165

Method of modifying cell proliferation in a plant by
modulating the mnt gene and the plants derived by said
method

2. claims: 46, 127

Method of modifying cell proliferation in a plant by
modulating the the IPT1 gene and the plants derived by said
method said plants

3. claims: 46,127

Method of modifying cell proliferation in a plant by
modulating the ARGOS gene and plants derived by said method

4. claims: 48, 129

Method of modifying cell proliferation in a plant by
modulating the cell cycle gene CYCD3;1 and plants derived by
said method.

5. claims: 48, 129

Method of modifying cell proliferation in a plant by
modulating the cell cycle gene CYCB1;1 and plants derived by
said method.
